

## New water wheel joins fight against harbor trash

Powered by water currents and sunshine, new device is capable of scooping up 50,000 pounds of garbage daily



By Timothy B. Wheeler, The Baltimore Sun  
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With debris from last week's deluge still littering the Inner Harbor, a big new weapon is poised to take on the rafts of floating trash that routinely gross out Baltimore's waterfront visitors and residents alike.

A "water wheel" designed to scoop up 50,000 pounds of flotsam every day debuts Thursday in the channel between Piers 5 and 6, where the Jones Falls empties into the Northwest Branch of the Patapsco River. Its backers hope it will make a serious dent in the torrent of garbage that's flushed into the harbor whenever it rains, besmirching the city's watery showcase.

"It's a big step in our march toward a swimmable, fishable harbor," said Laurie Schwartz, president of the Waterfront Partnership, a coalition of businesses, nonprofits and city agencies that spearheaded the \$800,000 project as part of its 4-year-old "Healthy Harbor" campaign.

Tons of trash wash into the harbor every year, most of it carried down the Jones Falls and Gwynns Falls from storm drains that flush litter and debris off streets and parking lots throughout the city and much of Baltimore County. The floating garbage is not only unsightly, but adds to the sewage leaks, stormwater runoff and other pollution that renders the harbor and area streams largely unfit for human contact.

The water wheel is a bigger, flashier successor to a trash-collecting device tried in the same spot several years ago. The earlier device, which resembled a 19th-century water mill from Baltimore's industrial past, was relocated after it proved incapable of handling the flood of debris from the Jones Falls.

With solar panels and an arched canopy, the new gadget looks more like a spacecraft in a sci-fi movie, said John Kellett, who designed both.

"It's a wild machine," said Kellett, managing agent of Clearwater Mills, the firm that built the wheels. "We were proud of the last one, but this one is quite an accomplishment."

He called it "bigger, stronger, faster, prettier" than his original creation.

Environmentalists welcome its arrival, anxious to see more progress in cleaning up the harbor and reversing decades of pollution and neglect.

"It looks amazing," said David Flores, the Baltimore Harbor Waterkeeper. "I'm excited to see how it works."

The Maryland Port Administration contributed \$500,000 toward the wheel's construction, while the rest came from Constellation, the renewable-energy arm of Exelon Corp., which has its headquarters on Pratt Street, within sight of the wheel. The Waterfront Partnership plans to cover a portion of the \$100,000 annual operating costs, said Schwartz, but hopes to raise donations for most of it.

The wheel will be anchored in the mouth of the Jones Falls, unlike the little city-owned trash scows that scoot around the harbor scooping up trash.

Two floating booms will funnel debris in the water to the device, where a spinning rake-like gadget will push trash onto a conveyor belt. The belt deposits its load into a dumpster, which will be towed to shore and unloaded whenever it fills.

The entire contraption runs on nature — the flow of the Jones Falls and the sun. The conveyor belt is powered by a big mill wheel, which turns as water flows into the harbor. But when the current isn't strong enough, solar panels on the canopy provide 30 kilowatt-hours of electricity, enough to power a typical household. They also recharge a battery aboard, which kicks in when the sun isn't shining.

There's even a small crane to handle tree trunks and other large floating debris that the wheel can't pick up. Though the device wasn't quite ready for last week's downpour, Kellett said he tried out the crane after the rains stopped and it was able to hoist some "monster logs."

Even if it's bigger and better, Kellett said, the wheel probably still can't corral all the tree branches, trash and other junk that pour into the harbor during tropical storms and torrential downpours like last week's. In those cases, he said, the prudent thing to do might be to get the wheel out of harm's way, so it won't be damaged.

"We might have a few learning things to work out, as with any new machine," he said. "But I think we're in pretty good shape to handle most of the storms that the Jones Falls has."

The wheel arrives as the cleanup from last week's deluge continues. Jeff Raymond, spokesman for the city Department of Public Works, said that crews have removed 64.8 tons of trash and debris from the harbor since the rains stopped.

Massive as that is, it's just a snapshot of what flushes into the harbor. It's so trash-strewn that several years ago the Environmental Protection Agency declared it "impaired" by aquatic litter, the third water body in the nation to earn such a designation.

It joined the Los Angeles River in Southern California and the Washington area's Anacostia River in facing federal orders to curtail floating garbage. Maryland environmental regulators have drawn up a similar plan for the harbor that would require the city and Baltimore County to remove 200 tons of debris a year.

The draft trash-reduction plan was released nearly two years ago, but Blue Water Baltimore, the environmental group for which Flores works, called it inadequate. Jay Apperson, a spokesman for the state Department of the Environment, said officials have been trying to resolve the group's concerns. Apperson said state officials hope to forward the plan soon to EPA for its approval.

The city is forging ahead already, announcing recently that it had collected 400 tons of litter, broken glass, vehicle fluids, bacteria and other pollutants in the first month of an expanded street sweeping program. Community cleanups have rounded up more than 15 tons of refuse in the past year, and officials plan to start installing screens on storm drains to keep the trash out, Raymond added.

Activists say that will help, but what's needed is a multi-pronged effort by government and private groups in the city and Baltimore County suburbs, which are contributing a significant share of the litter that winds up in the harbor via the Jones and Gwynns falls.

"The trash comes from upstream," said the Waterfront Partnership's Schwartz. "We hope to put the water wheel out of business, but it's up to the region."

"Obviously, we need to be focused on reducing pollution at the source," said Halle Van der Gaag, executive director of Blue Water Baltimore.

She acknowledged that's a tall order and there's little consensus on how to do it. She and other activists support charging a fee for disposable merchandise bags or a refundable deposit on drink bottles, arguing that would

discourage littering. But opposition from industry and retailers fearful of losing business has blocked such legislation repeatedly in the city and in Annapolis.

"There's no silver bullet for trash," said Flores, the harbor waterkeeper. "The most difficult thing is behavior change, to make sure trash doesn't leave a person's hand except to go into a trash bin."

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